

REMARKS

The Office Action dated October 6, 2003 has been received and carefully noted. The above amendments to the specification and claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1 and 12 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,128,282 to Liebetreu et al. and claim 23 was rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,333,917 to Lyon et al. Both rejections are traversed for the reasons outlined below. No new matter has been added, and no new issues are raised which require further consideration and/or search. Claims 1-23 are therefore submitted for consideration.

Claims 2-11 and 13-22 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant wishes to thank the Examiner for indicating the allowability of claims 2-11 and 13-22.

Claims 1 and 12 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,128,282 to Liebetreu et al. The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in independent claims 1 and 12. Claim 1 recites a method for marking data packets from a source. The method includes the steps of determining a sending rate estimate, s ; and marking a packet to one of a plurality of priority levels based on the sending rate estimate, s . Claim 12 recites an apparatus for marking data packets from a

source. The apparatus includes a means for determining a sending rate estimate, s and a means for marking a packet to one of a plurality of priority levels based on the sending rate estimate, s .

As will be discussed below, Liebetreu et al. fails to disclose or suggest the elements of claims 1 and 12.

Liebetreu et al. teaches a network that includes a plurality of nodes, each of which includes a data generator and a node controller. Col. 3, lines 44-61. A digital data stream is outputted by the data generator and received in a FIFO buffer which implements a rate threshold window defined by a minimum rate and a maximum rate that are in response to a predictable data rate. Col. 4, lines 25-31. The predictable data rate describes the rate of a component of the digital data stream that has a constant rate. Col. 4, lines 31-32. The constant data rate component is that part of the digital data stream in which the data rate can be inferred based on the node's rate of data generation in the immediately preceding time interval, the type of data being transferred, and the like. Col. 4, lines 32-36. According to Liebetreu et al., the data rate may not be constant, but rather will vary slightly above and below the predictable data rate. Col. 4, lines 39-41. The minimum and maximum rates are values that define a lower and upper limit of the acceptable variance of predictable data rate and define thresholds in the FIFO memory. Col. 4, lines 41-46. When the predictable data rate falls outside of this acceptable variance, the node controller initiates procedures to accommodate this change in data rate. Col. 4, lines 45-48. See Figure 2.

According to Liebetreu et al., a query task identifies when the composite data rate of the digital data stream is outside of the rate threshold window of the FIFO buffer. Col. 9, lines 7-9. If the composite rate is approximately equal to the predictable data rate, the FIFO buffer will always be filled to a level responsive to the predictable data rate within the rate threshold window. Col. 9, lines 10-16. If the composite rate exceeds the maximum rate of the threshold window, a processor partitions the digital data stream by removing a quantity of the oldest bits in the FIFO buffer, creating a data packet component, and routing the data packet component to a packetizer to enable a packet transmission element. Col. 9, lines 17-31. Data packets from the data packet component are retained until a match is found between the time slot count and address assignments reserved for the transfer of data packets. Col. 9, lines 32-46.

Applicant respectfully submits that Liebetreu et al. fails to teach or suggest each element of independent claims 1 and 12. Independent claim 1 in part recites determining a sending rate estimate, s ; and marking a packet to one of a plurality of priority levels based on the sending rate estimate, s . Independent claim 12 in part recites means for determining a sending rate estimate, s and a means for marking a packet to one of a plurality of priority levels based on the sending rate estimate, s . The Office Action states that Liebetreu et al. teaches the rate estimate, s , of claims 1 and 12 as the predictable data rate. The Office Action also states that Liebetreu et al. teaches marking a packet to one of a plurality of priority levels based on the sending rate estimate, s , of claims 1 and 12 as a rate threshold window that defines the acceptable variance of rates of the queues in the

buffer and if rate exceeds maximum rate, the processor removes a quantity of oldest bits in the queues in the buffer this allowing other packets to be routed. Applicant respectfully submits that the step of marking as recited in claims 1 and 12 is not the same as removing a quantity of the oldest bits in the FIFO buffer to allow other packets to be routed, if the composite rate exceeds the maximum rate of the threshold window. The elements recited in claims 1 and 12 which state that a packet is marked to one of a plurality of priority levels based on the sending rate estimate is different from what is taught in Liebetreu et al. Instead of teaching marking of a packet to level based on the sending rate as recited in claims 1 and 12, Liebetreu et al. teaches that a component determines if the composite rate exceeds the maximum rate of the threshold window, and if it does Liebetreu et al., removes a quantity of the oldest bits in the FIFO buffer, creates a data packet component, routes the data packet component to a packetizer to enable a packet transmission element and retains data packets from the data packet component until a match is found between the time slot count and address assignments reserved for the transfer of data packets. Therefore, Applicants respectfully submit that Liebetreu et al. does not teach or suggest each of the elements recited in claims 1 and 12 and that the rejection under 102(e) be withdrawn.

Claim 23 was rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,333,917 to Lyon et al. The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in independent claim 23. Claim 23 recites a method to determine probabilities for marking

a packet to a priority level. The method includes the steps of determining a first probability and determining at least one second probability. The method also includes the step of weighting each probability so that each probability contributes to a net probability.

As will be discussed below, the cited prior art reference of Lyons et al. fails to disclose or suggest the elements of claim 23.

Lyons et al. teaches a method for avoiding and controlling congestion in a packet network. According to Lyons et al., Random Early Detection (RED) is a strategy for congestion avoidance and control wherein when a packet arrives, a filter updates the average occupancy which an algorithm uses to determine whether to mark the incoming packet. Col. 1, lines 59-61. The algorithm compares an average queue size to minimum and maximum thresholds and marks all arriving packets if the average queue size exceeds the maximum threshold. Col. 1, line 66 - Col. 2 line 2. When the average queue size is between the thresholds, each arriving packet is marked with a per-packet marking probability, which weights the random decision of whether or not to mark the packet. Col. 2, lines 4-7. To compute a final per-packet marking probability, the algorithm determines an intermediate packet marking probability by comparing the average queue size to the minimum and maximum thresholds. Col. 2, lines 7-11. The algorithm then computes the final packet marking probability as a function of the intermediate probability and a count of the number of packets received since the last marked packet. Col. 2, lines 14-19.

Applicant respectfully submits that Lyons et al. fails to teach or suggest each element of independent claim 23. Independent claim 23 recites in part determining a first probability; determining at least one second probability; and weighting each probability so that each probability contributes to a net probability. The Office Action states that the first and second probabilities of claim 23 are taught in Lyons et al. as the per-packet marking probability and the intermediate packet marking probability. The Office Action also states that the per-packet marking probability and the intermediate packet marking probability are used in Lyons et al. to compute the final per-packet marking probability. Applicant respectfully submits that Col. 2, lines 14-19 of Lyons et al. teaches that the final per-packet marking probability is computed as a function of the intermediate probability and a count of the number of packets received since the last marked packet. Therefore, Applicant submits that Lyons et al. does not teach or suggest weighting each of the first and second probabilities so that each probability contributes to a net probability as recited in claim 23. Applicant therefore requests that that 102(e) rejection be withdrawn because Lyons et al. does not teach each of the elements recited in claim 23.

As noted previously, claims 1 and 12 recite subject matter which is neither disclosed nor suggested in Liebetreu et al. Claim 23 also recites subject matter which is neither disclosed nor suggested in Lyons et al. It is therefore respectfully requested that all of claims 1-23 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

Arlene P. Neal

Arlene P. Neal
Registration No. 43,828

Customer No. 32294

SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

APN:lls